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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHOU, ALBERT T	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/911,304	MELAMPY ET AL.	
	Examiner	Art Unit	
	Albert T. Chou	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9-20,23-33 and 37-44* is/are rejected.

7)☒ Claim(s) *6-8,21,22 and 34-36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 20 and 25 recite the limitation "said processor" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 9-19, 23-33 and 37-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Ma et al. (US Patent Number: 6,775,280), hereinafter referred to as Ma.

Regarding claim 1, Ma teaches a router network 20 (Figure 1; col. 5, lines 7-10), which can carry video packet (Col. 9, lines 34-35; *A method for providing rapid rerouting of real-time multi-media data flows*), comprising the steps of:

- Device 22 receives data packets (Figure 1; col. 5, lines 49-56; *receiving a data packet at a first endpoint*), from Nodes C, F, A, B or E (Figure 1; col. 5, lines 56-58; *a second endpoint*), having an assigned QoS, source and destination information;

- Device 22 scans the source and destination fields to determine the source and intended destination of the packet (Figure 5, step 102; col. 10, lines 42-46; *determining a source address and a destination address from said data packet*);
- Device 22 selects a set of compliant paths from all paths extending from the Device 22 based on the assigned QoS, the Policy 52, and the Network Topology Information 72 which includes Hop Data 88 and Propagation Delay Data 90 (Figure 4, figure 5, step 110; col. 10, lines 58-63; *determining a forwarding destination if more than one destination address of said data packet is provided*).

Regarding claims 2, 16 and 30, it is well defined in ISO/ITU/CCITT or TCP/IP standards that the lower three layers, which handle the datagrams, are physical layer (layer 1 or level 1), data link layer (layer 2 or level 2) and network/packet layer (layer 3 or level 3) respectively. The source and destination addresses, such as IP datagram, are defined in IP header fields (layer 3). It is inherent to any routing devices, such as routers, to first remove/insert the layer 2 data link header before it forwards/passes down the received datagram or frame to the higher (layer 3)/lower layer (layer 1) for further processing.

Regarding claims 3, 4, 17, 18, 31 and 32, it is inherent that a header of level 2 or layer 2, which has the exactly same meaning as level 2, is a link protocol header according to ISO/ITU/CCITT or TCP/IP standards.

Regarding claims 5, 19 and 33, Ma teaches that Device 22 can receive a video packet, which includes QoS delay, delay bound, etc. (Figure 4; col. 9, lines 34-37; *data packet is a real-time protocol data flow packet*).

Regarding 9, 20 and 34, Ma teaches Control Circuit 44 (Figure 2) which scans the source and destination fields to determine the source and intended destination of the packet (Figure 5, step 102; col. 10, lines 42-46; *determining a forwarding destination)* and selects a set of compliant paths from all paths extending from the Device 22 based on the assigned QoS, the Policy 52, and the Network Topology Information 72 which includes Hop Data 88 and Propagation Delay Data 90 (Figure 4; figure 5, step 110; col. 10, lines 58-63; *determining and analyzing flow quality statistics for each of said destination addresses*).

Regarding claims 10, 24 and 38, Ma teaches at least a portion of the QoS field 60 of the Packet 30 includes, as the QoS Delay 86, a delay bound (a maximum amount of time available for the Packet 30 to reach its intended destination, i.e., Source/Destination 84) (Figure 4; col. 9, 35-39). Ma further teaches the Policy Stage 24 analyzes the Hop data (e.g., available paths to NODE D), the Propagation Delay Data 90 (e.g., the delays through each path or node along each path), and the Policy 52 (e.g., the port corresponding to output port 42-1 requires at least 50% general data packet bandwidth) (Figure 4; col. 9, 40-43; *step of performing traffic measurement on said received data packet*).

Regarding claims 11, 25 and 39, Ma teaches the Efficiency Stage 26 selects one of the compliant paths from the set of Compliant Paths on the List 94 based on the

Network Efficiency Information 54 (Figure 4; col. 9, lines 66-67). The Network Efficiency Information includes the Network Load Information 74 describing network traffic at the output ports, cost, security, delay and bandwidth capacity of the Device 22 (Figure 4, col. 10, line 1-4; *step of applying QoS characteristics to said packet*). Ma further teaches that suppose the Load Information 74 indicates that the Network 20 is more congested at output port 42-1 (Figure 1, through which path BD passes) than that at output port 42-2 (Figure 1, through which path CD passes). The Efficiency Stage 26 could then select path CD over path BD in compliance of a network efficiency constraint (Figures 1 & 4; col. 10, line 9-14; *allows for guaranteed bandwidth for transmission of said data packet within a data flow*).

Regarding claims 12, 26 and 40, Ma teaches the Device 22 includes a Policy Stage 24 and an Efficiency Stage 26 that enable the deice to provide different QoS to the host computers, e.g. Node D, by routing data in a manner that satisfies both QoS policy and network efficiency constraints (Figures 2-4; col. 5, lines 51-56; *step of applying quality of service characteristics provides for policing and shaping of said data flow*).

Regarding claims 13, 14, 27, 28, 41 and 42, Ma teaches the network 20 includes a variety of devices, such as host computer and routers (Figure 1; col. 5, lines 7-10). The IP specification sates that routers must accept datagrams up to the maximum of the MTUs of networks to which they attach. It is inherent to a router's (an endpoint like Device 22) IP software as in Ma's invention to choose an initial datagram size and

arrange a way to divide large datagrams into smaller pieces (*the step of fragmenting*) when the datagram needs to traverse a network that has smaller MTU.

Regarding claims 15 and 43, Ma teaches a router network 20 system (Figure 1; col. 5, lines 7-10), which can carry video packet (Col. 9, lines 34-35; *A method for providing rapid rerouting of real-time multi-media data flows*), comprising a Device 22 (Figure 1; col. 5, lines 49-56; *a first endpoint*), connected Nodes C, F, A, B and E (Figure 1; col. 5, lines 56-58; *a second endpoint*), which further comprises:

- Multiple input ports 40-0 to 40-M and output ports 42-0 to 42-N (Figure 2; col. 6, lines 27-29; *a transceiver*);
- Multi-Stage Routing Decision 26, Policy Table 66, Network Topology Table 68 and Network Efficiency Table 70 (Figure 3; col. 8, lines 1-4; *Software stored within said first endpoint defining functions to be performed by said first endpoint*); and
- Multi-stage Control Circuit 44 (Figure 2; col. 6, lines 48-49; *a processor; a controller*) which scans the source and destination fields to determine the source and intended destination of the packet (Figure 5, step 102; col. 10, lines 42-46; *determining a source address and a destination address from said data packet*) and selects a set of compliant paths from all paths extending from the Device 22 based on the assigned QoS, the Policy 52, and the Network Topology Information 72 which includes Hop Data 88 and Propagation Delay Data 90 (Figure 4; figure 5, step 110; col. 10, lines 58-63;

determining a forwarding destination if more than one destination address of said data packet is provided).

Regarding claim 44, Ma teaches the elements of the Control Circuit 44 are implemented in hardware as actual circuits (Col. 12, lines 38-40; *said the controller is located within an application specific integrated circuit*).

Allowable Subject Matter

4. Claims 6-8, 21-22, 34-35 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC

Albert T. Chou

March 24, 2005

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